

**REMARKS**

With the entry of this Response, Claims 85-110 and 112 are pending. Claims 1-84 and 111 have been previously canceled. Claims 85, 94, and 103 are independent claims. In view of the subsequent remarks regarding these independent claims, Applicant respectfully requests allowance of all the pending claims.

**35 U.S.C. § 103(A) REJECTION**

***A. Claims 85-87 and 89-93***

The Office Action rejected Claims 85-87 and 89-93 under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,920,396 issued to Wallace *et al.* ("Wallace") in view of Ringwald *et al.* (1999) "GXD: a Gene Expression Database for the laboratory mouse", *Nucleic Acids Research*, 27(1): 106-112 ("Ringwald"). Applicant respectfully traverses this rejection.

Under 35 U.S.C. § 103(a), the Patent Office bears the burden of establishing a *prima facie* case of obviousness. A *prima facie* case of obviousness requires: (1) that there be a suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the teachings of reference or to combine the teachings of multiple references; (2) that there be a reasonable expectation of success; and (3) that the prior art reference, or references when combined, teach or suggest all of the elements of the claim. (*See, e.g.*, M.P.E.P. § 2143). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and cannot be based on Applicant's disclosure. (*See, e.g., In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991); *In re Fine*, 87 F.2d 1071, 1074 (Fed. Cir. 1988)). Furthermore, rejections based on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be explicit analysis including some rational underpinning to support the legal conclusion of obviousness. (*K.S.R. Int'l Co. v. Teleflex, Inc.*, 550 U.S. 14 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). If the references do not teach each and every claimed element, then a finding of obviousness fails.

Applicant respectfully submits that the present Office Action fails to meet its *prima facie* burden as the combination of Wallace and Ringwald fail to teach or suggest each and every element of currently pending independent Claim 85. In the discussion herein, Applicant is not discussing the references individually, as this is a combination of references to support the

obviousness rejection, but is instead pointing out the lack of teaching in either or both of the references to illustrate that the obviousness rejection cannot be maintained.

In the rejection of independent Claim 85, the Office Action stated that Wallace teaches “receiving from a plurality of databases query result data . . . comprising expression data.” (Office Action, p. 3, citing Wallace, column 3, lines 24-34). The portion of Wallace cited by the Office Action reads, in its entirety, as follows:

Search query parameters are accepted for and search results displayed from a search request for multiple sequence sets performed against a plurality of biological data repositories in a user interface layer. The search request and the search results are processed in an intermediate layer. The user interface layer is interfaced by processing the search query parameters into a structured database query and presenting database results as the formatted search results. The structured database query is executed in a database layer. At least one queue handler loading the structured database query is provided. A plurality of biological data repositories are selected.

(column 3, lines 24-34). Applicant is uncertain as to how the cited portion of Wallace teaches or suggests “expression data” as currently claimed. To this end, Applicant notes that neither the cited portion of Wallace nor any other portion of Wallace references the term “expression data”. Furthermore, as the Office Action mailed December 1, 2009 did not rely on Wallace to teach or suggest “expression data”, Applicant respectfully submits that the present Office Action erred in relying on Wallace in this rejection to provide the teaching or suggestion of query result data comprising “expression data” as currently claimed.

In this rejection, the Office Action further relies on Ringwald for teaching or suggesting “result data comprising immunohistological data, *in situ* hybridization data . . . functional data, and structural data.” (Office Action, p. 4) (internal citations omitted). Applicant respectfully submits that Ringwald fails to cure the deficiencies of Wallace. The Office Action specifically cited paragraph Figure 4 of Ringwald for teaching “functional data”. Neither the written description of Figure 4 nor Figure 4 itself teaches or suggests “functional data” as currently claimed. The legend for Figure 4, which is titled “Expression record for *in situ* data”, reads in its entirety:

On the left is a sample of query result details for RNA *in situ* hybridization data. Each entry lists the bibliographic reference, the gene whose expression was analyzed, and the molecular probe

used and provides links to the respective records. The first table (from the top) gives descriptions for all the specimens used, additional ones display the detailed results obtained for each specimen. A sample result set is shown for specimen 1. Level of expression is provided if given by the author. A hypertext link to the raw image data is provided, when those data are available in the database. On the right is a sample image of the *in situ* hybridization data that corresponds to specimen 1.

The written description of Figure 4 in Ringwald states:

'Elemental' expression results such as the time and tissue of expression, the genetic origin of the sample, the number and sizes of detected bands, and sequence information are described together with the molecular probe, the expression assay type, and the experimental conditions used (Figs 4 and 5).

(Ringwald, page 106, column 2, paragraph 5). As these excerpts demonstrate, Ringwald says nothing about query result data comprising functional data as currently claimed.

Applicant respectfully submits that the M.P.E.P. requires the Office to give the claims the broadest reasonable interpretation in light of the specification. (M.P.E.P. § 2111, citing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005)). The present application provides a discussion of functional data at least at page 21, line 34 through p. 22, line 13 as well as in Figure 3. In view of Applicant's disclosure, Figure 4 in Ringwald is not a teaching or suggestion of result data comprising "functional data" as currently claimed.

The Office Action also cited Ringwald for teaching "structural data". Specifically, the Office Action equated "structural data" with "searchable fields [that] include anatomical structure". (Office Action, p. 4, citing the figure legend for Figure 3). Applicant notes that neither the written description of Figure 3 nor Figure 3 itself teaches or suggests "structural data" as currently claimed. The legend for Figure 3, which is titled "Querying gene expression data in GXD", reads in its entirety:

The left side shows the GXD Data Query Form. At the top, users can choose to sort results in a number of ways, and obtain summaries of assays (not shown) or assay results (right side). Searchable fields include gene name, gene symbol, map position, developmental stage and anatomical structure. Anatomical structures are named according to a controlled vocabulary system, which can be examined by linking on the phrase 'browse the Anatomical Dictionary'. Users can specify particular assay types, select those where expression was detected, not detected, or either,

and determine if anatomical substructures or superstructures should be included in the search. The sample query shown asks for all genes located within 3 cM of the *Pltr6* locus that are expressed in muscle or in a substructure of muscle. On the right is the returned assay results summary, sorted by Gene symbol. Assay IDs link to the detailed expression records. Examples of assay records are shown in Figures 4 and 5.

The written description of Figure 3 in Ringwald states:

The Gene Expression Data query form . . . enables questions such as ‘In what anatomical structures and/or at what developmental stages are specified genes expressed/not expressed?’ and ‘What genes are expressed in/not expressed in specified tissues and/or during specified developmental stages?’. Spatial queries can take advantage of the hierarchical structure of the anatomical dictionary by including anatomical substructures or superstructures in the search.

(Ringwald, page 108, column 1, paragraph 2 – column 2, paragraph 1). As these excerpts demonstrate, Ringwald says nothing about query result data comprising structural data as currently claimed.

It appears to Applicant that the Office has inadvertently confused structural data such as the three-dimensional macromolecular structures described by Applicant with anatomical structures such as the brain, kidney, and liver disclosed in Ringwald. Applicant respectfully submits that the M.P.E.P. requires the Office to give the claims the broadest reasonable interpretation in light of the specification. (M.P.E.P. § 2111, citing *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005)). The present application provides a discussion of structural data at least at page 13 (lines 19-20), page 16 (lines 1-2), page 17 (lines 11-16), and page 24 (line 27) – page 25 (line 3). In view of Applicant’s disclosure, Ringwald’s query of expression in various anatomical structures is not a teaching or suggestion of result data comprising “structural data” as currently claimed.

Therefore, Applicant respectfully submits that Wallace does not teach or suggest expression data, which is a claimed element for which it was cited by the Office Action, and Ringwald does not teach or suggest functional data or structural data, which are claimed elements for which it was cited by the Office Action. In light of Wallace’s deficiencies and Ringwald’s failure to cure these deficiencies, the combination of Wallace and Ringwald fails to teach or suggest each and every element of Applicant’s currently pending independent Claim 85.

Therefore, the combination fails to establish a *prima facie* case of obviousness. For this reason alone, Applicant respectfully submits that the Office Action fails to meet its *prima facie* burden.

Wallace and Ringwald also fail to teach or suggest “displaying an executive summary of the record” as currently claimed. The Office Action specifically cited Wallace for teaching this claimed element, and stated that “FIG. 6 is a screenshot 100 showing, by way of example, a Web page for displaying a search summary. [Column 8, lines 35-45].” (Office Action, p. 7). Applicant’s disclosure explains that the “various modules can be viewed in an executive summary” and that “an ‘executive summary’ is a summary of all the information associated with a record (unique identification record)”, and that “the executive summary displays the information found in the individual modules associated with the given record.” These modules include immunohistological data, *in situ* hybridization data, functional data, expression data, and structural data. (See paragraphs [0070] and [0083] and FIG. 4). Neither Figure 6 in Wallace nor the description of Figure 6 at column 8, lines 35-45 teaches or suggests an executive summary of the record comprising the query result data comprising immunohistological data, *in situ* hybridization data, functional data, expression data, and structural data as currently claimed.

Therefore, as the combination of Wallace and Ringwald fails to teach or suggest receiving from the plurality of databases query result data comprising immunohistological data, *in situ* hybridization data, functional data, expression data, and structural data as currently claimed, the combination of Wallace and Ringwald necessarily fails to teach or suggest displaying an executive summary of the record as currently claimed.

For at least these reasons, whether considered individually, or in combination with one another, the Wallace and Ringwald fail to provide a teaching or suggestion of Applicant’s currently claimed invention. Consequently, this combination of these references fails to render as obvious Applicant’s currently pending independent Claim 85. As “dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious” (*In re Fine*, 5 U.S.P.Q.2d 1569, 1600 (Fed. Cir. 1988)), the combination of Wallace and Ringwald also fails to render as obvious Claims 86-87 and 89-93, all of which depend from independent Claim 85 and incorporate every element of independent Claim 85. Applicant respectfully requests that the Examiner withdraw this rejection and allow Claims 85-87 and 89-93.

***B. Claim 88***

The Office Action rejected Claim 88 under 35 U.S.C. § 103(a) as obvious over Wallace in view of Ringwald, and further in view of U.S. Patent No. 6,649,391 to Luche *et al.* (“Luche”). (Office Action, p. 6). Applicant respectfully traverses this rejection.

The Office Action applied Wallace and Ringwald in this § 103(a) rejection in the same way and for the same disclosure for which the Office Action applied the Wallace and Ringwald in the § 103(a) rejection of Claims 85-87 and 89-93. However, the Office Action acknowledged that Wallace and Ringwald do not disclose query result data comprising complementary deoxyribonucleic acid data, expressed sequence tag data, and pharmacology data, and cited Luche for such a disclosure. (Office Action, p. 7).

As discussed above, the combination of Wallace and Ringwald fails to teach or suggest receiving from the plurality of databases query result data comprising immunohistological data, *in situ* hybridization data, functional data, expression data, and structural data and displaying an executive summary of the record as currently claimed. Luche fails to cure the deficiencies of the combination. For at least these reasons, whether considered individually, or in combination with one another, Wallace, Ringwald, and Luche fail to provide a teaching or suggestion of Applicant’s currently claimed invention. Consequently, this combination fails to render as obvious Applicant’s currently pending independent Claim 85, and also fails to render as obvious dependent Claim 88. Applicant respectfully requests that the Examiner withdraw this rejection and allow Claim 88.

***C. Claims 94-98, 100-108, 110, and 112***

The Office Action rejected Claims 94-98, 100-108, 110, and 112 under 35 U.S.C. § 103(a) as obvious over Wallace in view of Ringwald, and further in view of U.S. Patent Application Publication No. 2003/0055683 to Gibson *et al.* (“Gibson”). Applicant respectfully traverses this rejection.

***(i) Independent Claim 94***

The Office Action applied Wallace and Ringwald in the § 103(a) rejection of independent Claim 94 in the same way and for the same disclosure for which the Office Action applied these references in the § 103(a) rejection of independent Claim 85. Here, the Office Action relied on

Gibson for disclosing several steps of Applicant's currently claimed method. The Office Action stated that it would have been obvious to the skilled person to "incorporate the teaching of Gibson with the teachings of Wallace, as modified by Ringwald, for the purpose of creating update drug data for addition to the original drug information, and a transmit mechanism that transmits the update drug data to the remote device upon receiving a request from a remote device for the update drug data." (Office Action, p. 10).

Applicant is uncertain as to how the Office Action's statement relates to Applicant's claimed method of managing a biological database. The Office Action has failed to provide explicit evidence of motivation to combine Wallace and Ringwald with the methods and systems for disseminating drug information disclosed by Gibson. Furthermore, as discussed above, the combination of Wallace and Ringwald fails to teach or suggest receiving from the plurality of databases query result data comprising immunohistological data, in situ hybridization data, functional data, expression data, and structural data, and displaying an executive summary of the record comprising such data as currently claimed. Gibson fails to cure the deficiencies of the combination of Wallace and Ringwald. In light of these deficiencies, the combination of Wallace, Ringwald, and Gibson fails to teach or suggest each and every element of Applicant's currently pending independent Claim 94.

For at least these reasons, whether considered individually, or in combination with one another, the combination of Wallace, Ringwald, and Gibson fail to provide a teaching or suggestion of Applicant's currently claimed invention. Consequently, this combination fails to render as obvious Applicant's currently pending independent Claim 94. As "dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious" (*In re Fine*, 5 U.S.P.Q.2d 1569, 1600 (Fed. Cir. 1988)), Applicant asserts that combination of Wallace, Ringwalds, and Gibson also fails to render as obvious Claims 95-98 and 100-102, all of which depend from independent Claim 94 and incorporate every element of independent Claim 94. Applicant respectfully requests that the Examiner withdraw this rejection and allow Claims 94-98 and 100-102.

***(ii) Independent Claim 103***

The Office Action applied Wallace and Ringwald in the § 103(a) rejection of independent Claim 103 in the same way and for the same disclosure for which the Office Action applied these

references in the § 103(a) rejection of independent Claims 85 and 94. Here, the Office Action relied on Gibson for disclosing “a query node, comprising a second memory and a second processor, wherein the second process is configured to periodically download and store a plurality of databases from an external network.” (Office Action, p. 14). The Office Action stated that it would have been obvious to the skilled person to “incorporate the teaching of Gibson with the teachings of Wallace, as modified by Ringwald, for the purpose of creating update drug data for addition to the original drug information, and a transmit mechanism that transmits the update drug data to the remote device upon receiving a request from a remote device for the update drug data.” (Office Action, p. 10).

Applicant is uncertain as to how the Office Action’s statement relates to Applicant’s claimed system for managing a biological database. The Office Action has failed to provide explicit evidence of motivation to combine Wallace and Ringwald with the methods and systems for disseminating drug information disclosed by Gibson. Furthermore, as discussed above, the combination of Wallace and Ringwald fails to teach or suggest query result data comprising immunohistological data, in situ hybridization data, functional data, expression data, and structural data, and fails to teach or suggest an executive summary of the record comprising such data as currently claimed. Gibson fails to cure the deficiencies of the combination of Wallace and Ringwald. In light of these deficiencies, the combination of Wallace, Ringwald, and Gibson fails to teach or suggest each and every element of Applicant’s currently pending independent Claim 103.

For at least these reasons, whether considered individually, or in combination with one another, the combination of Wallace, Ringwald, and Gibson fail to provide a teaching or suggestion of Applicant’s currently claimed invention. Consequently, this combination fails to render as obvious Applicant’s currently pending independent Claim 103. As “dependent claims are nonobvious under section 103 if the independent claims from which they depend are nonobvious” (*In re Fine*, 5 U.S.P.Q.2d 1569, 1600 (Fed. Cir. 1988)), Applicant asserts that combination of Wallace, Ringwald, and Gibson also fails to render as obvious Claims 104-108, 110, and 112, all of which depend from independent Claim 103 and incorporate every element of independent Claim 103. Applicant respectfully requests that the Examiner withdraw this rejection and allow Claims 103-108, 110, and 112.



***D. Claims 99 and 109***

The Office Action rejected Claims 99 and 109 under 35 U.S.C. § 103(a) as obvious over Wallace in view of Ringwald, and further in view of Gibson, and further in view of Luche. (Office Action, p. 16). Applicant respectfully traverses this rejection.

The Office Action applied Wallace, Ringwald, and Gibson in this § 103(a) rejection in the same way and for the same disclosure for which the Office Action applied the Wallace and Ringwald in the § 103(a) rejection of independent Claims 94 and 103. The Office Action acknowledged that Wallace, as modified by Ringwald and Gibson, does not disclose the query result data further comprising complementary deoxyribonucleic acid data, expressed sequence tag data, and pharmacology data, and cited Luche for such a disclosure. (Office Action, p. 17). The Office Action stated, “It would have been obvious to an ordinary person skilled in the art at the time of the invention was made to incorporate the teachings of Luche with the teachings of Wallace, as modified by Ringwald and Gibson, for the purpose of analyzing sequences in order to provide treatments for various health conditions.” (Office Action, p. 17).

Applicant is uncertain as to how the Office Action’s statement relates to Applicant’s claimed method and system for managing a biological database. The Office Action has failed to provide explicit evidence of motivation to combine Wallace and Ringwald with the methods and systems for disseminating drug information disclosed by Gibson. The Office Action has also failed to provide explicit evidence of motivation to combine Wallace, Ringwald, and Gibson with Luche to provide a teaching or suggestion of Applicant’s claimed invention. Furthermore, as the combination of Wallace, Ringwald, and Gibson fails to teach or suggest receiving from the plurality of databases query result data comprising immunohistological data, *in situ* hybridization data, functional data, expression data, and structural data and displaying an executive summary of the record as currently claimed in Claim 94, or query result data comprising immunohistological data, *in situ* hybridization data, functional data, expression data, and structural data, and an executive summary of the record comprising such data as currently claimed in Claim 103, Luche fails to cure the deficiencies of this combination.

For at least these reasons, whether considered individually, or in combination with one another, the Wallace, Ringwald, Gibson, and Luche fail to provide a teaching or suggestion of Applicant’s currently claimed invention. Consequently, this combination fails to render as obvious Applicant’s currently pending independent Claims 94 and 103, and also fails to render

as obvious dependent Claims 99 and 109. Applicant respectfully requests that the Examiner withdraw this rejection and allow Claims 99 and 109.

**CONCLUSION**

The foregoing is a complete response to the Office Action dated May 14, 2010. For at least the reasons provided above, Applicant respectfully requests allowance of all of the pending claims. Early and favorable consideration is solicited. If a telephone conversation would expedite the prosecution of these claims to issuance, then Applicant's representative invites and encourages the Examiner to contact the Applicant's representative at the telephone number listed below.

Applicant files this Response solely to facilitate prosecution. As such, Applicant reserves the right to pursue claims of broader or similar scope as originally filed in a continuation application or other application after allowance of the present application. Applicant does not concede that the current or past rejections are correct and reserve the right to challenge such rejections later in prosecution or on appeal.

Applicant does not believe that a fee is due.

Respectfully submitted,

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